

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

Original Claims 1-3 have been amended to address the issues raised on page two and the top of page three of the Official Action, and to incorporate other minor wording changes for purposes of improving the readability of the claims, without narrowing the claim scope. Accordingly, withdrawal of the claim rejections based on the second paragraph of 35 U.S.C. § 112 is respectfully requested.

Appreciation is expressed to Examiner White for the indicated allowability of Claim 3. New Claim 9 sets forth the subject matter recited previously in Claims 1 and 3. It is thus respectfully submitted that independent Claim 9 is allowable.

The subject matter of this application pertains to a seat reclining device that helps prevent the locking mechanism from becoming unlocked when torsional deformation in the seat back occurs, such as during a front end collision. The seat reclining device also helps protect the seated occupant by absorbing energy of the crash while the occupant is restrained by the seat back.

As set forth in Claim 1, the seat reclining device comprises a pair of upper arms mounted on the seat back, a pair of lower arms fixed to the seat cushion, with the upper arms being rotatable relative to the lower arms, a pair of locking mechanisms adapted to restrict the rotation of the upper arms relative to the lower arms, an operation handle provided at one locking mechanism, and a connecting mechanism which, when the operation handle is operated to unlock the one locking mechanism, unlocks the other locking mechanism as well. Under the condition in which the operation handle is operated to unlock one locking mechanism, the one

locking mechanism, the operation handle, the connecting mechanism and the other locking mechanism engage one another so that they operate together. On the other hand, under the condition that the side of the seat back fixed to the seatbelt is more deformed by the tension of the seatbelt than the other side of the seat back, any engagement among the one locking mechanism, the operation handle, the connecting mechanism and the other locking mechanism is disengaged so that the one locking mechanism is unable to operate together with the other locking mechanism.

The Official Action sets forth a rejection of original independent Claim 1 based on the disclosure in U.S. Patent No. 6,669,296 to *Moriyama et al.* The Official Action indicates that in the seat reclining device disclosed in *Moriyama et al.*, when the side of the seat back fixed to the seatbelt is deformed more than the other side of the seat back by the tension of the seatbelt, any engagement between the locking mechanism on one side of the seat, the locking mechanism on the other side of the seat, the operation handle and the connecting mechanism is disengaged so that the two locking mechanisms are unable to operate together. As discussed below, no such disclosure exists in *Moriyama et al.* Indeed, *Moriyama et al.* discloses just the opposite.

Moriyama et al. describes a seat reclining device 10 that includes an upper arm 2 fixed to the seat back frame B and a lower arm 1 fixed to the seat cushion frame A. A locking mechanism 3 is disposed between the upper and lower arms, and includes a cam 40 and a plurality of pawls 50, 60 having toothed portions for engaging similarly toothed portions of the upper arm 2. The pawls 50, 60 are specifically constructed with two toothed portions 54a, 54b, 64a, 64b. During normal

operation, the radially outermost toothed portion 54a, 64a on each pawl 50, 60 engages an inner toothed portion 25a on the upper arm. On the other hand, as discussed near the bottom of column 7 and the top portion of column 8 of *Moriyama et al.*, in an emergency situation such as during a frontal collision, a slight deformation occurs between the toothed portions 54a, 64a on the pawls and the inner toothed portion 25a on the upper arm 2. In such a situation, the second toothed portions 54b, 64b on the pawls engage a second inner toothed portion 26a of the upper arm 2 to thus share the increased applied load with the other engaged toothed portions 54a, 56a, 25a.

There is no disclosure in *Moriyama et al.* that during the emergency situation, or during any other circumstances in which the side of the seat back fixed to the seatbelt is more deformed by the tension of the seatbelt than the other side of the seat back, any engagement amongst the one locking mechanism, the operation handle, the connecting mechanism and the other locking mechanism is disengaged so that the one locking mechanism is unable to operate together with the other locking mechanism as recited in Claim 1. In fact, *Moriyama et al.* is not at all concerned with avoiding the possibility of the one locking member operating together with the other locking mechanism under the noted circumstances and is not at all interested in configuring the recliner so that any engagement amongst the one locking mechanism, the operation handle, the connecting mechanism and the other locking mechanism is disengaged when the side of the seat back fixed to the seatbelt is more deformed by the tension of the seatbelt than the other side of the seat back. In fact, *Moriyama et al.* seeks just the opposite result in that when a large load is applied to the recliner, the additional toothed portions 54b, 64b on the pawls

engage the additional inner toothed portion 26a of the upper arm 2 to thus provide more secure engagement between the pawls and the upper arm while the increased applied load is shared with the other engaged toothed portions 54a, 56a, 25a.

The Official Action comments that the splines 71 and 42a in *Moriyama et al.* correspond to the claimed convex portions. However, the splines 42a, 71 are not configured in a way which causes the one locking mechanism to not be operated together with the other locking mechanism under the condition that the side of the seat back fixed to the seatbelt is more deformed by the tension of the seatbelt than the other side of the seat back. Further, in connection with the dependent claims, *Moriyama et al.* does not disclose that the splines 42a, 71 provide the interspaces as claimed.

For at least the reasons set forth above, it is respectfully submitted that the seat reclining device recited in independent Claim 1, and the dependent claims, is patentably distinguishable over the disclosure in *Moriyama et al.*

Independent Claim 7 defines the seat reclining device in a slightly different manner, but nevertheless sets forth subject matter distinguishing the claimed seat reclining device over the disclosure in *Moriyama et al.* for reasons similar to those discussed above with respect to independent Claim 1. It is thus respectfully submitted that independent Claim 7 is also allowable.

Early and favorable action with respect to this application is respectfully requested.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful

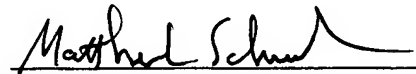
in resolving any remaining issues pertaining to this application the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

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